

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012482**Date Inspected:** 05-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** M. Gregson, J. Salazar**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Hinge K Pipe Beams**Summary of Items Observed:**

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The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3

Hinge-K Pipe Beam Assembly 102A-2:

The QA Inspector witnessed WID #B62 (Marcus Belgrade) perform grinding, utilizing a mechanical grinder, on the completed partial Joint Penetration (PJP) weld joints. The QA Inspector noted that these weld joints were designated as joint #W2-19 (a109/a106) and W2-20 (a110-2/a106). The QA Inspector noted that these weld joints were previously completed and the grinding was being performed on the excessive reinforcement, on the final cover passes and weld terminations. The QA Inspector noted that per AWS D1.5, the reinforcement shall not exceed 1/8" (3mm). The QA Inspector was informed by Lead QC Inspector Mike Gregson, that after the grinding is complete, a QC Inspector will then perform final Visual and Magnetic particle testing (VT/MT) on the weld joints, after the minimum 48 hrs. cooling time, per AWS D1.5.

Hinge-K Pipe Beam Assembly 102A-1:

The QA Inspector witnessed OIW production personell, Troy Smith, Marc Belgrade and Darren Dozier placing the assembly 102A-1 in the welding fixture. The QA Inspector noted that the assembly was being placed, in preparation for the future fit-up of the fuse. See attached pictures below.

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AG Machining (Boring, OR)

On this date, the QA Inspector arrived at AG Machine to observe OIW perform the weld repairs, on the previously discovered indications on the finished overlay surface, on this Fuse 120A-7. The QA Inspector met with OIW QC Inspector Jose Salazar, OIW welder (WID# C34) Mark Craig and an AG Machinist. QC Inspector Salazar explained to the QA Inspector that he was instructed to perform visual testing (VT) on 100% of the overlay and WID #C34 will then perform the GTAW weld repairs. The QA Inspector noted that the indications, currently present in the overlay, appeared after AG completed the 2nd final cut pass, for final machining and appeared to be small clusters of slag inclusions. The QA Inspector witnessed QC Inspector Salazar performing VT on the overlay surface and marking up surface discrepancies and indications, for weld repairs. QC Inspector Salazar then explained to the QA Inspector that the indications were measured at varying lengths from 1mm to 150 mm and no wider than 6 mm. The QA Inspector then witnessed WID #C34 grinding out these previously marked indications, to a depth no greater than 3 mm and then later setting up to perform the GTAW.

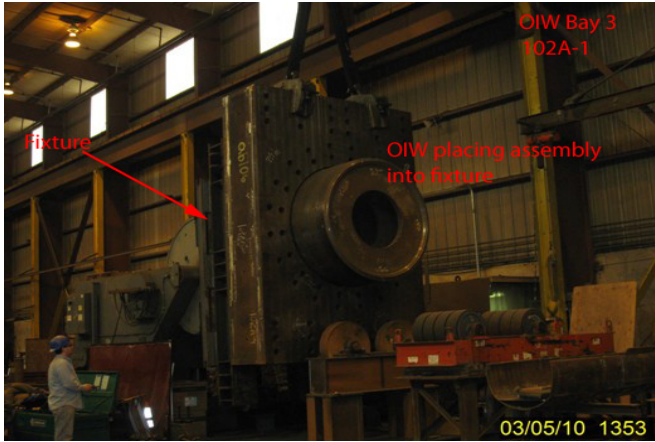
The QA Inspector noted that WID #C34 was currently qualified to perform these repairs and would be utilizing welding procedure specification (WPS 8022). The QA Inspector witnessed the AG Machinist rotating the fuse assembly to access the weld repair areas in the flat position. The QA Inspector then witnessed WID #C34, performing the pre-heat required, utilizing a torch and then observed a temperature of approximately 175 degrees Fahrenheit, after the pre-heat was complete. The QA Inspector noted that 125 degrees Fahrenheit minimum was required, per WPS 8022. The QA Inspector then observed WID #C34 performing the GTAW on the previously excavated repair areas. The QA Inspector also observed QC Inspector Jose Salazar recording the in-process welding parameters of 124 amps, 16 volts and travel speed of 4 inches per minute (i.p.m.). The QA Inspector also verified these welding parameters. The QA Inspector then observed the AG Machinist rotating the Fuse, to access several more excavations, that would need to go through the above mentioned repair procedure. The QA Inspector observed that Mr. Salazar was present the entire time in which the GTAW welding was being performed. The QA Inspector was then informed by the AG Machinist and QC Inspector Salazar that the repairs will not be ground flush after completed. The AG Machinist explained that an additional cut pass will be required, approximately .5 mm deep, that will machine flush these weld repair areas, then finish honing will start. QC Inspector Salazar explained that 100% Visual and Penetrant Testing (VT/PT) will then be completed and any other additional surface discrepancies and indications, will then be marked up and possibly GTAW repaired. See attached pictures below.

Material, Equipment, and Labor Tracking (MELT)

QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 2 OIW Production, 1 QC Inspector and 1 Supervisor. The QA Inspector observed at AG Machine Works: 1 AG Machinist, 1 AG Supervisor, 1 OIW Production and 1 QC Inspector.

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Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer
